

Amendments to the claims

1. (previously presented) A catalyst powder, comprising:

    a nickel or nickel alloy particulate having an average particle size of between about 10 and about 70 Angstroms, said particulate dispersed in a support matrix, said powder formed predominately of its nickel or nickel alloy particulate and support matrix.

Claim 2 (canceled)

3. (previously presented) The catalyst of claim 1, wherein said particulate has an average particle size of between about 10 and about 50 Angstroms.

4. (previously presented) The catalyst of claim 1, wherein said particulate has an average particle size of between about 10 and about 40 Angstroms.

5. (previously presented) The catalyst of claim 1, wherein said particulate has an average particle size of between about 10 and about 30 Angstroms.

6. (previously presented) The catalyst of claim 1, wherein said particulate has an average particle size of between about 10 Angstroms and about 20 Angstroms.

7. (original) The catalyst of claim 1, wherein said metal particulate is between about .0001% to about 99% by weight of said catalyst.

8. (previously presented) The catalyst of claim 1, wherein said particulate has a particle proximity of between about 2 Angstroms and about 300 Angstroms.

9. (previously presented) The catalyst of claim 1, wherein said particulate comprises nickel alloy.

10. (previously presented) The catalyst of claim 1, wherein said particulate comprises nickel metal.

11. (original) The catalyst of claim 9, wherein said nickel alloy comprises at least one element selected from the group consisting of Al, Co, Sn, Mn, Ti, and Fe.

12. (original) The catalyst of claim 9, wherein said nickel alloy comprises at least one element selected from the group consisting of Al, Co, Sn, Mn, and Ti.

13. (previously presented) The catalyst of claim 9, wherein said nickel alloy is an alloy selected from the group consisting of NiCo alloy, NiMn alloy, NiCoAl alloy, NiCoMnTi alloy, and NiCoMnFe alloy.

14. (original) The catalyst of claim 9, wherein said nickel alloy has an fcc crystal orientation.

15. (original) The catalyst of claim 1, wherein said support comprises at least one inorganic oxide.

16. (original) The catalyst of claim 1, wherein said support comprises at least one metal oxide.

17. (original) The catalyst of claim 16, wherein said at least one metal oxide comprises at least one element selected from the group consisting of Ni, Co, Mn, Ti, Zr, Fe, and the rare earth elements.

18. (original) The catalyst of claim 16, wherein said at least one metal oxide comprises at least one oxide selected from the group consisting of manganese oxide, nickel manganese oxide, and mixtures thereof.

19. (original) The catalyst of claim 16, wherein said at least one metal oxide is multivalent.

20. (original) The catalyst of claim 16, wherein said at least one metal oxide comprises an oxide of Mn, Ni, Co, and Ti.

21. (original) The catalyst of claim 16, wherein said at least one metal oxide comprises an oxide of Mn, Ni, Co, Ti, and Fe.

22. (original) The catalyst of claim 16, wherein said at least one metal oxide comprises an oxide of Mn, Co, and Ti.

23. (previously presented) The catalyst of claim 16, wherein said at least one metal oxide comprises fine-grained oxides and coarse-grained oxides.

24. (original) The catalyst of claim 16, wherein said at least one metal oxide is microcrystalline.

25. (original) The catalyst of claim 1, wherein said support comprises carbon.

26. (original) The catalyst of claim 1, further comprising zeolite.

27. (original) The catalyst of claim 1, wherein said catalyst is compositionally graded within said support.

28. (original) The catalyst of claim 1, wherein said particulate is substantially uniformly distributed throughout said support.

29. (original) The catalyst of claim 1, wherein said catalyst is formed by leaching at least a substantial portion of the bulk of a hydrogen storage alloy.

30. (previously presented) A catalyst particle, comprising:

a nickel and/or nickel alloy particulate having an average particle size of between about 10 and about 70 Angstroms, said particulate disposed in a support, said particulate and said support forming at least 25% by volume of said catalyst particle, said nickel alloy lacking platinum and palladium.

Claim 31 (canceled)

32. (previously presented) The catalyst of claim 30, wherein said particulate has an average particle size of between about 10 and about 50 Angstroms.

33. (previously presented) The catalyst of claim 30, wherein said particulate has an average particle size of between about 10 and about 40 Angstroms.

34. (previously presented) The catalyst of claim 30, wherein said particulate has an average particle size of between about 10 and about 30 Angstroms.

35. (previously presented) The catalyst of claim 30, wherein said particulate has an average particle size of between about 10 and about 20 Angstroms.

36. (original) The catalyst of claim 30, wherein said particulate is about .0001% to about 99% by weight of said catalyst.

37. (previously presented) The catalyst of claim 30, wherein said particulate has a particle proximity of between about 2 Angstroms and about 300 Angstroms.

38. (original) The catalyst of claim 30, wherein said nickel alloy comprises at least one element selected from the group consisting of Al, Co, Sn, Mn, Ti, and Fe.

39. (original) The catalyst of claim 30, wherein said nickel alloy comprises at least one element selected from the group consisting of Al, Co, Sn, Mn, and Ti.

40. (previously presented) The catalyst of claim 30, wherein said nickel alloy is an alloy selected from the group consisting of NiCo alloy, NiMn alloy, NiCoAl alloy, NiCoMnTi alloy, and NiCoMnFe alloy.

41. (original) The catalyst of claim 30, wherein said nickel alloy has an fcc crystal orientation.

42. (original) The catalyst of claim 30, wherein said support comprises at least one inorganic oxide.

43. (original) The catalyst of claim 30, wherein said support comprises at least one metal oxide.

44. (original) The catalytic material of claim 43, wherein said at least one metal oxide comprises at least one element selected from the group consisting of Ni, Co, Mn, Ti, Zr, Fe, and the rare earth elements.

45. (original) The catalytic material of claim 43, wherein said at least one metal oxide comprises an oxide of Mn.

46. (previously presented) The catalyst of claim 43, wherein said at least one metal oxide comprises an oxide of Mn and Ni.

47. (original) The catalyst of claim 43, wherein said at least one metal oxide comprises an oxide of Mn, Ni, Co, and Ti.

48. (original) The catalyst of claim 43, wherein said at least one metal oxide comprises an oxide of Mn, Ni, Co, Ti, and Fe.

49. (original) The catalyst of claim 43, wherein said at least one metal oxide comprises an oxide of Mn, Co, and Ti.

50. (original) The catalyst of claim 43, wherein said at least one metal oxide comprises fine-grained oxides and course-grained oxides.

51. (original) The catalyst of claim 30, wherein said support material comprises carbon.

52. (original) The catalyst of claim 30, further comprising zeolite.

53. (original) The catalyst of claim 30, wherein the density of said particulate is graded within support.

54. (original) The catalyst of claim 30, wherein said particulate is substantially uniformly distributed throughout said support.

55. (original) The catalyst of claim 30, wherein said catalyst is formed by leaching at least a substantial portion of the bulk of a hydrogen storage alloy.

Claims 56-89 (canceled)

90. (currently amended) A catalyst, comprising:

a metal particulate having an average particle size of ~~less than about 100~~ between about 10 and about 70 Angstroms, said metal particulate comprising a nickel alloy, said nickel alloy lacking platinum and palladium, said nickel alloy comprising at least one element selected from the group consisting of Al, Co, Sn, Mn, Ti, and Fe; and

a support.

Claim 91-92 (canceled)

93. (previously presented) The catalyst of claim 90, wherein said particulate has an average particle size of between about 10 and about 50 Angstroms.

94. (previously presented) The catalyst of claim 90, wherein said particulate has an average particle size of between about 10 and about 40 Angstroms.

95. (previously presented) The catalyst of claim 90, wherein said particulate has an average particle size of between about 10 and about 30 Angstroms.

96. (previously presented) The catalyst of claim 90, wherein said particulate has an average particle size of between about 10 and about 20 Angstroms.

97. (previously presented) The catalyst of claim 90, wherein said nickel alloy comprises Co.

98. (previously presented) The catalyst of claim 90, wherein said nickel alloy comprises Mn.

99. (previously presented) The catalyst of claim 90, wherein said nickel alloy is an alloy selected from the group

consisting of NiCo alloy, NiCoAl alloy, NiCoMnTi alloy, NiCoMnFe alloy, and NiMn alloy.

100. (previously presented) The catalyst of claim 90, wherein said support comprises at least one oxide.

101. (previously presented) The catalyst of claim 30, wherein said particulate and said support form at least 50% of the volume of said catalyst particle.

102. (previously presented) The catalyst of claim 30, wherein said particulate and said support form at least 75% of the volume of said catalyst particle.

103. (previously presented) The catalyst of claim 30, wherein said particulate and said support form at least 90% of the volume of said catalyst particle.

104. (previously presented) The catalyst of claim 30, wherein said particulate and said support form substantially the entire catalyst particle.